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MODERN WARSHIPS AND NAVAL AUXILIARIES (MODERNE KAMPFSCHIFFE UND--ETC(U)
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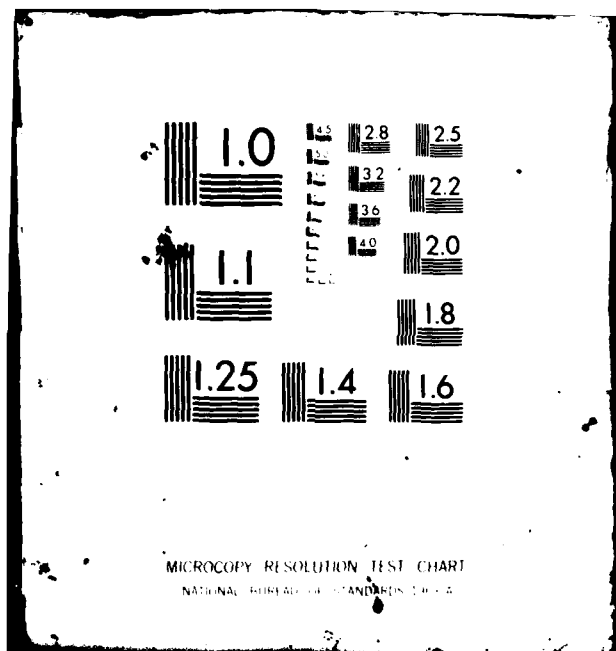
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DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
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Moderne Kampfschiffe und Hilfsschiffe der Marine

AUTHOR(S) AND/OR EDITOR(S): S. Breyer

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MODERN WARSHIPS AND NAVAL AUXILIARIES

/Breyer, S., *Moderne Kampfschiffe und Hilfsschiffe der Marine*, Soldat und Technik, No. 12, 1979, pp. 656-664, German/

The navy of the late 1980s and 1990s will look different from that of the present. The primary problem for future development is to create the potential for centrally controlled and coordinated direction of naval warfare from naval headquarters, which entails the combined efforts of the most diverse surface, undersea and airborne weapons systems. One of the basic problems of this new policy is how to create the new weapons systems it requires, while at the same time maintaining existing ones, whereby in the case of the latter, not least of all for funding reasons, it is a question of keeping them up-to-date for a longer period of time in order to facilitate their optimal utilization. What modern ship types does the navy currently have at its disposal and how well are they suited to meet future needs? These are legitimate questions and they will be dealt with in the following pages, in which a balance sheet will be simultaneously drawn up for the past construction years.

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At the moment, the most modern and capable units of the destroyer flotilla are the three LUETJENS-Class guided-missile destroyers, which have been in service for a decade. Their weapons systems are capable of combatting surface submarines and aircraft with surface-to-air missiles, guns and ASW systems. The LUETJENS-Class ships are a type derived from the well-known American CHARLES F. ADAMS Class, whose level of technology corresponds to that of the 1960s. Hence the necessity in the coming years for a "midlife conversion," aimed above all at raising their combat capability. For this reason these ships are to be equipped with HARPOON air-to-surface missiles and a missile system to combat hostile surface-to-surface missiles.

With the construction of the four HAMBURG-Class destroyers, the navy in due course discovered a connection to a newer (if still not the newest) standard of naval technology. These ships have been in service since the 1960s. The first two have in the meantime completed 15 years of service. From the beginning they lacked modern weapons systems for quick reaction in engaging sea and air targets. Not too long ago they received, among other things, in the course of a year-long modernization, EXOCET missiles for use against surface ships. What they still lack is a missile system for use against air targets. The development, presently underway, of short-range and very-short-range ASMD (antiship missile defense) systems could help to fill this void. At present the question is being examined whether a further modernization will enable these ships to meet requirements of naval warfare, and into the 1990s.

No further provisions have been made for measures to extend the lifespan of the six KOELN-Class frigates. Three of them, as well as the four remaining FLETCHER-Class destroyers (which have now been in service over 35 years), are being replaced by the six 122-Class frigates currently under construction, whose lead ship is the BREMEN. Plans to construct two more of these ships still have not been abandoned, despite German participation in the costly NATO AWACS (an airborne early warning and surveillance system) project. Completion of the 12-ship frigate program will most likely not occur until the early 1990s, i.e., at a time when the HAMBURG-Class destroyers already will have to be

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* Numbers in right hand margins indicate pagination in the original text.

replaced, and moreover, the question of replacing the LUETJENS-Class vessels will be very acute.

The fast patrol boat flotilla consists of 40 boats, most of which satisfy present-day requirements. The 10 oldest belong to the ZOBEL Class, which has been in service since the early 1960s and whose modernization was completed in 1972 after the construction of new weapons systems and outfitting with wire-guided torpedoes. While these boats are "thoroughbred" torpedo boats, the 20 148-Class boats built in France in the early 1970s carry guided missiles. The 10 143-Class patrol boats which appeared in the same period are both torpedo boats and missile boats. They are also the first units to have an integrated weapons control and guidance system with electronic data processing. Common to both the 148- and the 143-Class boats is the outfitting with EXOCET surface-to-surface missiles and one or two 76-mm OTOMELARA guns.

The 10 143A-Class boats are intended as replacements for the ZOBEL Class. What will especially distinguish this improved 143A Class is the presence of a ship/air missile component for short and very-short ranges. In addition, plans exist for improvements in the 143-Class boats which will bring them up to the level of armament of the 143A-Class boats some time in the mid-1980s. These measures are designed to improve AA defense and electronic warfare capabilities.

The mine warfare flotilla presently contains a number of vessels of different classes, which all date back to the 1960s, and some of them to the "founding years" of the new navy. Twelve of the 18 coastal minesweepers of the LINDAU Class have subsequently been converted to minehunters, and, among other things, acquired modern sonar equipment. Thanks to on-board clearance divers, it is now possible to deal effectively with ground mines without the boat having to run identified barriers. This measure nonetheless can only represent a temporary solution, inasmuch as the two decades since they were put in service have produced recognizable signs of aging. Present plans call for the creation, roughly in the mid-1980s, of 10 343-Class antimine boats. These vessels are intended for service in the Baltic Sea, and can perform two roles - one as a minelayer and the other as a minesweeper, equally effectively.

Toward the end of the 1980s, the vessels recently converted from coastal minesweepers to minehunters will have to be replaced by a modern type. Contemplated in this regard is the 332-Class minehunter, for which the preliminary work has been done, in the form of tests, required in order to assist in the selection of materials to be used in their hull construction: plastic, wood or demagnetized steel, which constitute the alternatives in this realm of modern warship construction. In this connection, the current trilateral minehunter program, involving France, the Netherlands and Belgium, is of particular interest to competent authorities. The same applies to almost identical designs and developments in Great Britain, Italy and Sweden.

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The effectiveness of mine countermeasures forces can be increased in the near future through current acquisition of the TROIKA remotely-controlled mine countermeasures system. This system reduces the boats' complements and thus reduces the special hazard they face. The two SACHSENWALD-Class mine transports also belong to the mine countermeasures flotilla-units with a bare full-load displacement of 4,000 t and an appropriate mine load, and a minelaying capability. Both ships have been in commissioned service for 10 years and are also now considered to be thoroughly modern.

The 24 205- and 206-Class submarines at the disposal of the submarine flotilla correspond to the state of the art of the 1960s. Because of their small size, efficient electric propulsion, long-range detection equipment and, above all, their high weapons load (each submarine carries eight torpedoes, with a standard displacement of less than 500 t!), they are also regarded abroad as a most remarkable, highly successful submarine class. In all probability, these units can remain in service into the 1990s.

Its successor will be the 208 Class, on which preliminary work has been in process for several years. The navy feels an urgent need to achieve a technological breakthrough with this new class, in order to meet the growing threat in the Baltic. In the process, it is clear that in the 1990s none of the existing submarines, since from time to time they are exposed to enemy detection by emergency snorkeling, will remain undetected. The solution is to be found in a submarine with a propulsion system which is totally independent of outside air, and for which also more effective torpedoes and - above and beyond that, antiship missiles - are sought.

The strongest component of the fleet, from the standpoint of number of units, is the landing boat group, which is attached to the amphibious transport group. It consists of almost 20 multipurpose BARBE-Class landing craft. These are not assault landing craft, but rather units which are better suited for transport missions in the island world at the entrances to the Baltic Sea. There is no evidence of any changes here. A design for a landing ship with a maximum load of 400 t, developed at the beginning of the 1970s using the "roll-on/roll-off" system, could not be completed, due to a lack of funds, and now stands little chance of fulfillment.

There is a diversity of auxiliaries. Whereas the supply ships are integrated into their own group - the supply flotilla - the others are attached to the individual commands and stations. Units of the LUENEBURG Class, built in the second half of the 1960s and still considered modern, belong to the supply flotilla. In the meantime, some of these units have been increased by lengthening the hull. The two large oilers of the RHOEN Class - ships with a carrying capacity of over 11,000 m³ of fuels and lubricants - also satisfy more modern requirements. They were built in 1974-75 as tankers (chemical tankers) for merchant service, but were bought by the navy in 1976 and accordingly converted. Although already 12 years in service, this positive value judgment also applies to the two ammunition transports of the WESTERWALD Class. They can accommodate a load of almost 1100 t of ammunition. All of these supply ships have equipment which enables them to deliver their load while underway to other ships on parallel courses.

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All told, there are 10 tenders serving the minehunters, fast patrol boats and submarines. They have been available since 1962/64, yet they still manage to satisfy modern-day requirements. A conversion program has been completed for the fast patrol boat tenders, in order to meet the supply requirements of the newly commissioned fast patrol boats. The sail training ship GORCH FOCK and the training ship DEUTSCHLAND are attached to the Muerwik Naval Academy. Both were built during the "founding period" of the new navy, and for years have been engaged in the training of the future generation. Through their many, long voyages, they have almost become better known abroad than at home. It is to be expected that both will remain in service quite a few years.

The present-day ASW boats of the THETIS Class were first designated as torpedo retrievers, then as "fleetwork boats". They were built almost 20 years ago, and consequently, from the standpoint of their technology, must be considered obsolete. Nevertheless, they can remain in service for an unforeseeable period. The question of their replacement has not been publicly discussed as yet.

Floating craft available to the navy also includes vessels whose assistance is indispensable -consisting of maintenance and repair ships, tank - cleaning ships, tugs, fresh-water supply ships, and the like. We should also not forget the test and experimental ships, assigned to the various test sites of the Federal Office for Military Technology and Procurement. This includes the test ship HANS BUERKNER, which in its day was developed side-by-side with the THETIS Class. The most diverse types of equipment and systems were tested aboard this vessel, and still are.

All in all, the navy is in a reasonably good material position today, but this will no longer suffice for future missions. Therefore, considerable investments and efforts will be required in the coming years, in order to procure the necessary inventory which will enable the navy to fulfill its NATO mission in the future.

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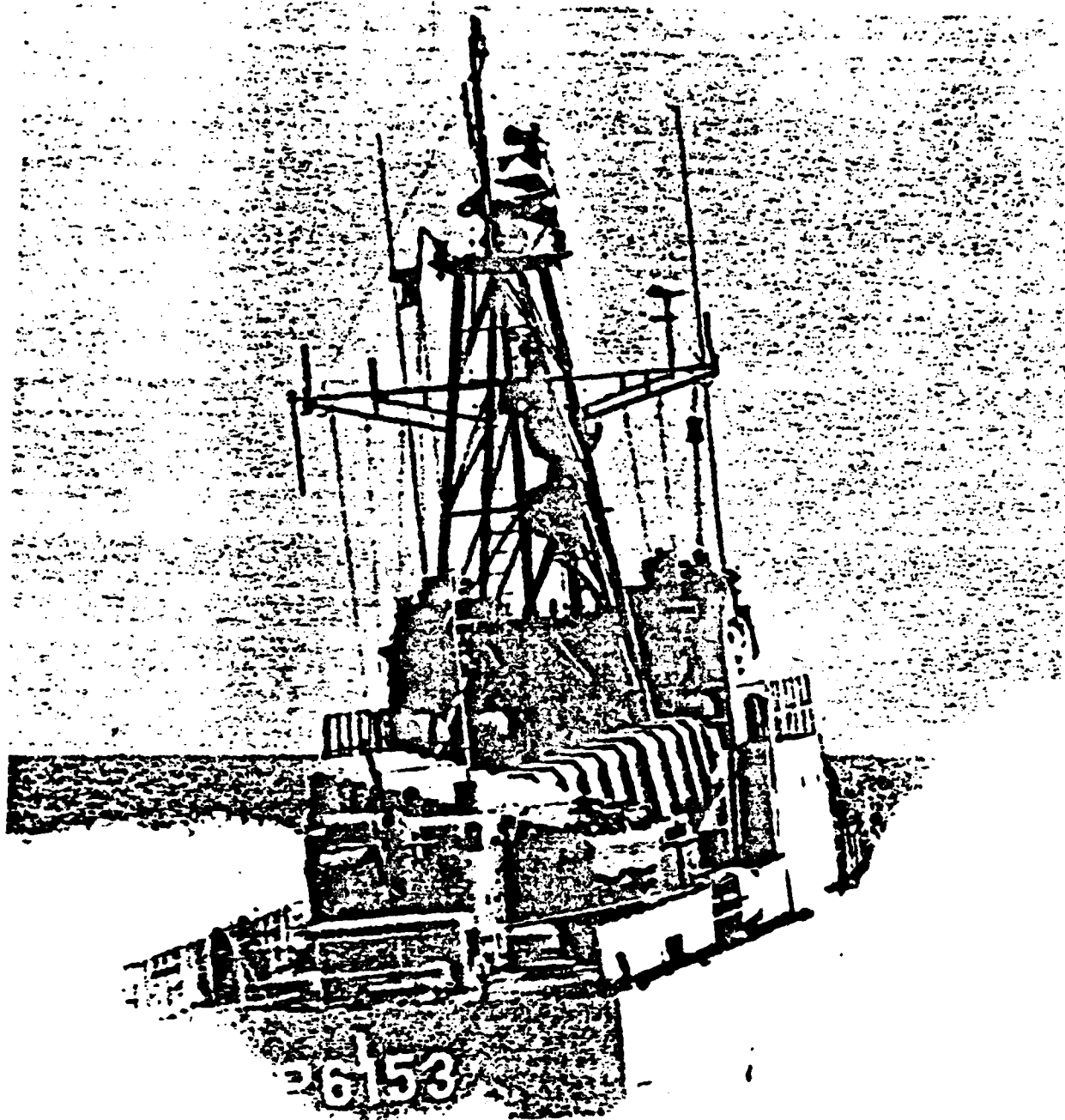


Photo 1: 148-Class fast missile patrol boats.

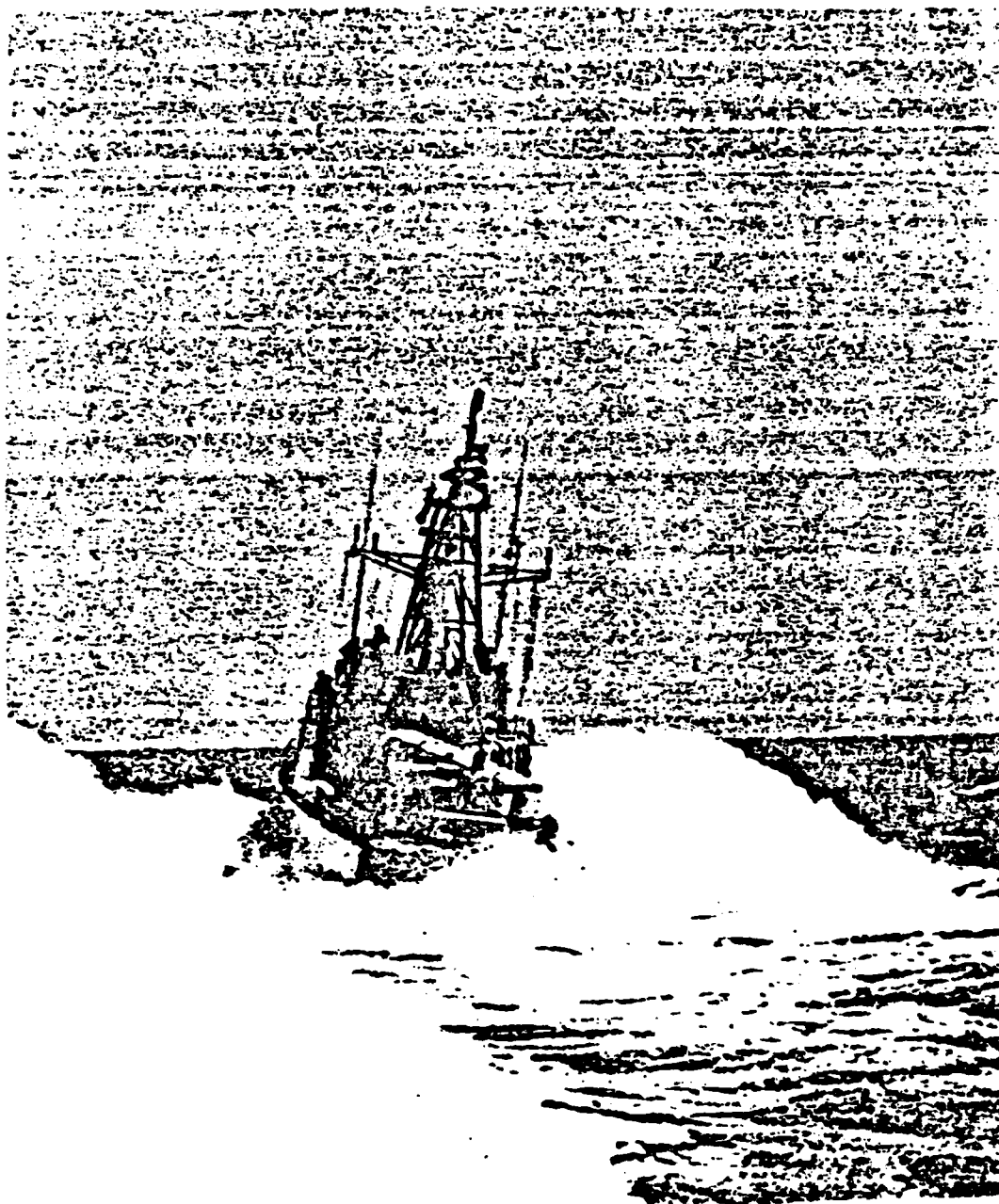


Photo 1: 148-Class fast missile patrol boats.

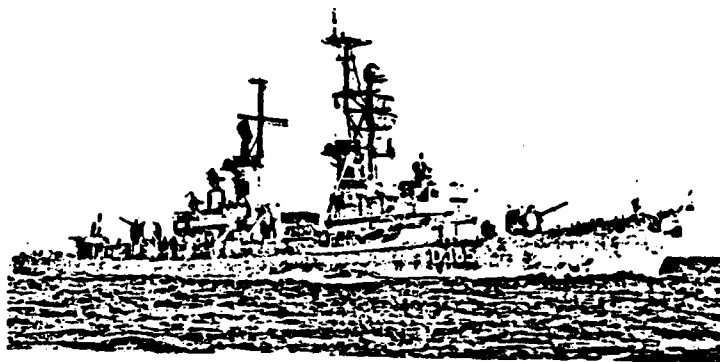


Photo 2: Technologically up-to-date in its time:
LUETJENS-Class (103-Class) guided-missile destroyer.

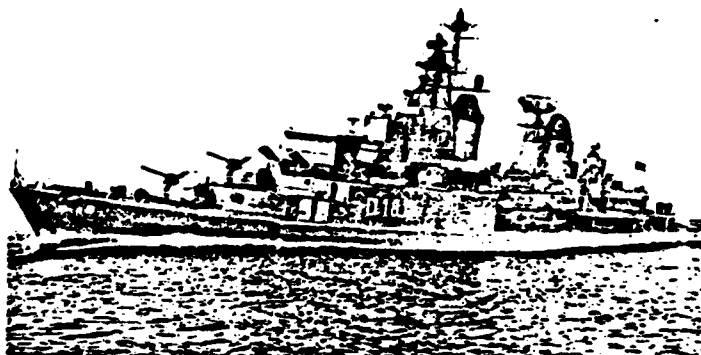


Photo 3: Longer lifespan possible through modernization:
HAMBURG-Class (101-Class) destroyer.

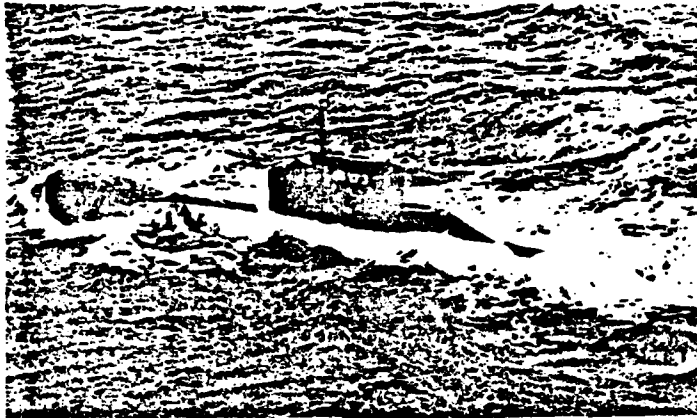


Photo 4: Small, but quite modern: submarine U-24 (206-Class).

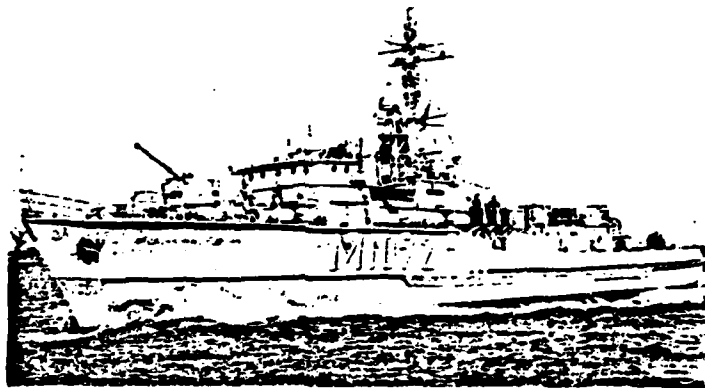


Photo 5: The most modern mine countermeasures equipment: LINDAU-Class (331-Class) minehunter.

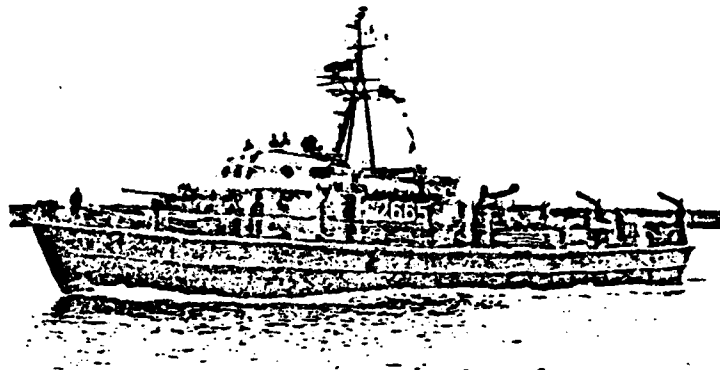


Photo 6: Mine countermeasures in a narrow coastal area:
the inshore minsweeper LORELEY (392-Class).

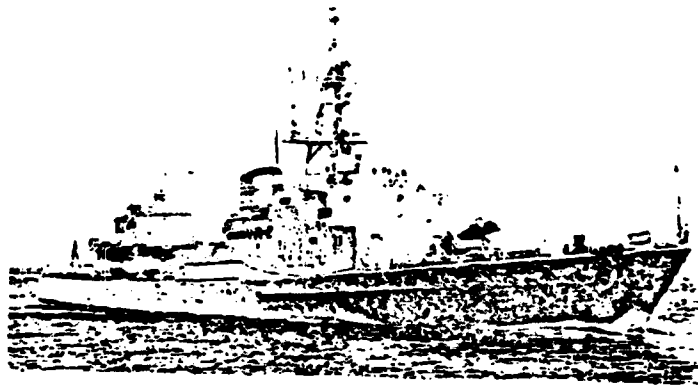


Photo 7: ASW "specialist": ASW boat NAJADE (420-Class).

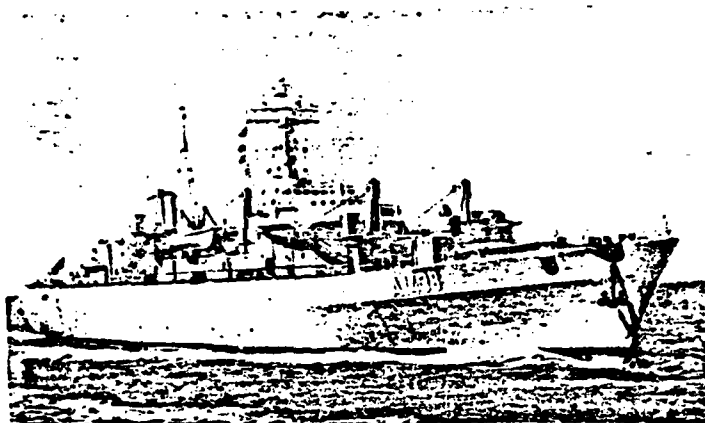


Photo 8: Intended for mine warfare: Mine transport ship
STEIGERWALD (762-Class)

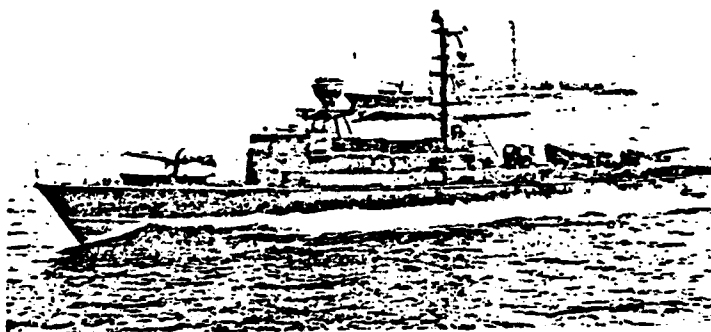


Photo 9: The most modern technology in all aspects: 143-Class
fast missile patrol boats.

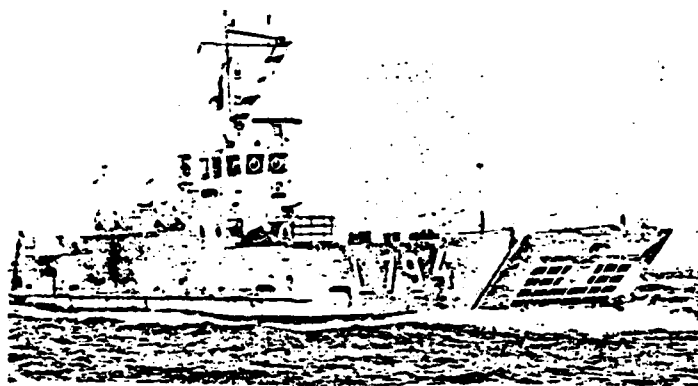


Photo 10: Not intended for actual amphibious assaults, but primarily for supply: the multipurpose landing craft FORELLE (520-Class).

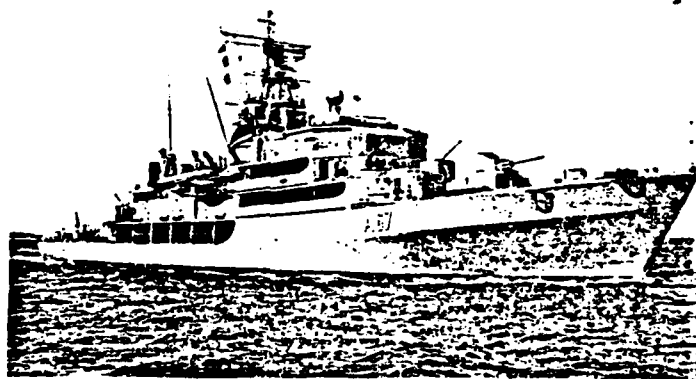


Photo 11: Small-boat "mother ship": the tender MOSEL (402-Class).



Photo 12: The logistics component: the supply ship LUENEBURG, before the conversion (701 A-Class).

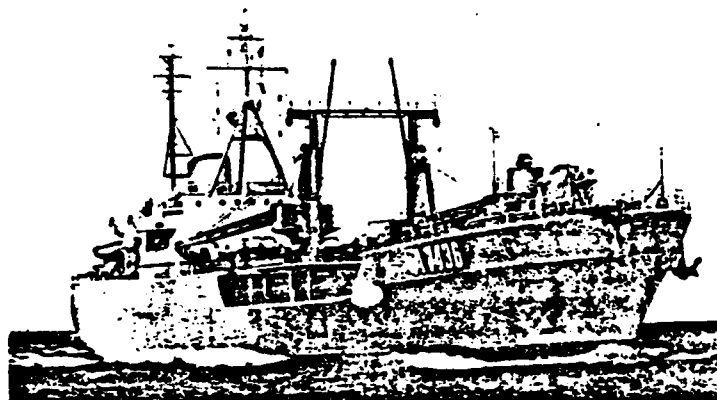


Photo 13: Underway with dangerous cargo aboard: ammunition transport ODENWALD (760-Class).

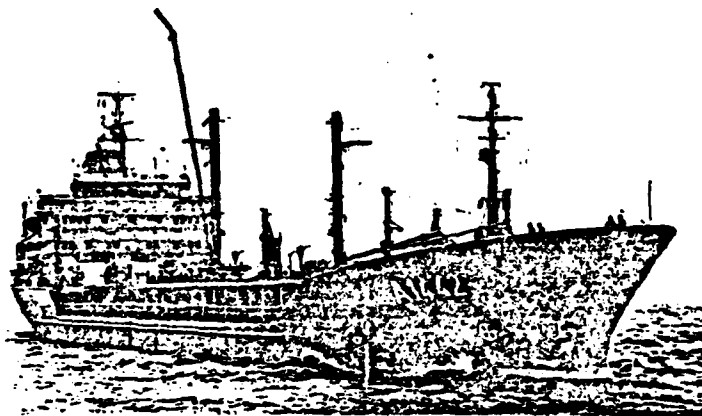


Photo 14: Cargo capacity almost 12,000 m³: large oiler
SPESSART (704-Class).

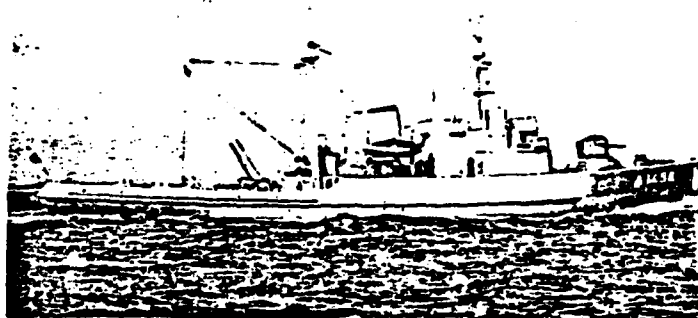


Photo 15: Versatile salvage and rescue ship FEHMARN (720-Class).

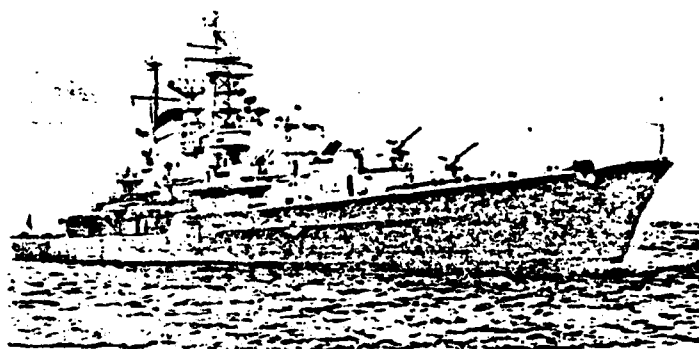


Photo 16: Largest warship of the West German Navy: training ship DEUTSCHLAND (440-Class).

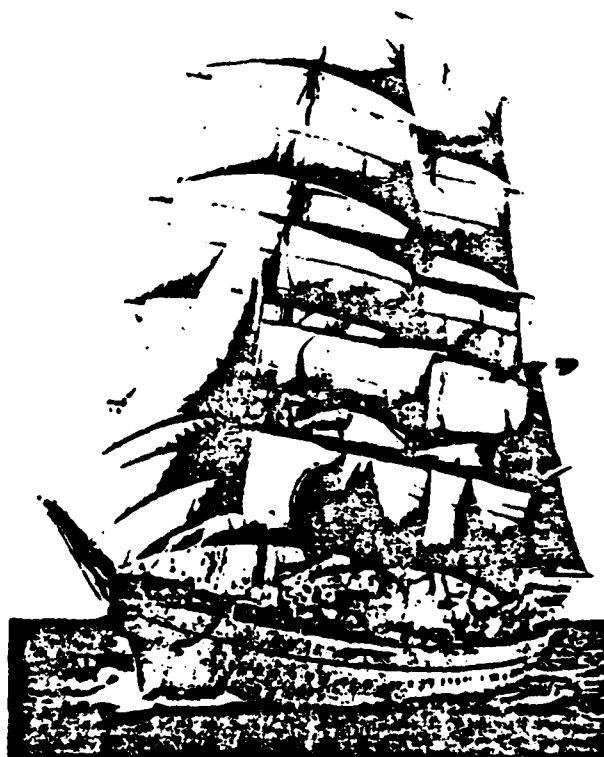
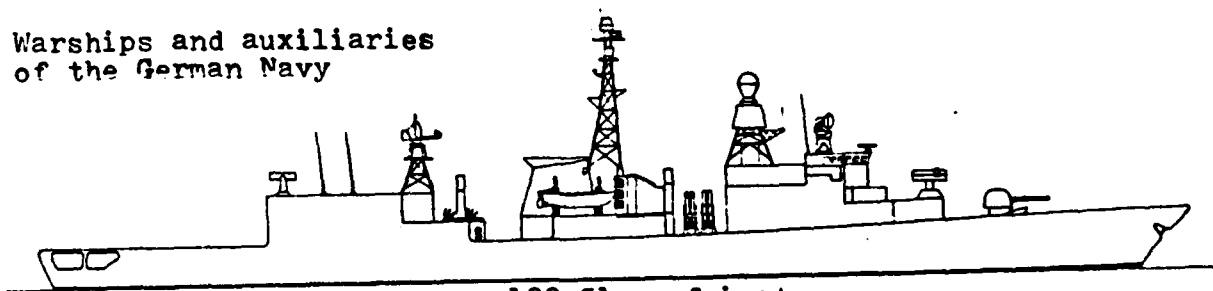
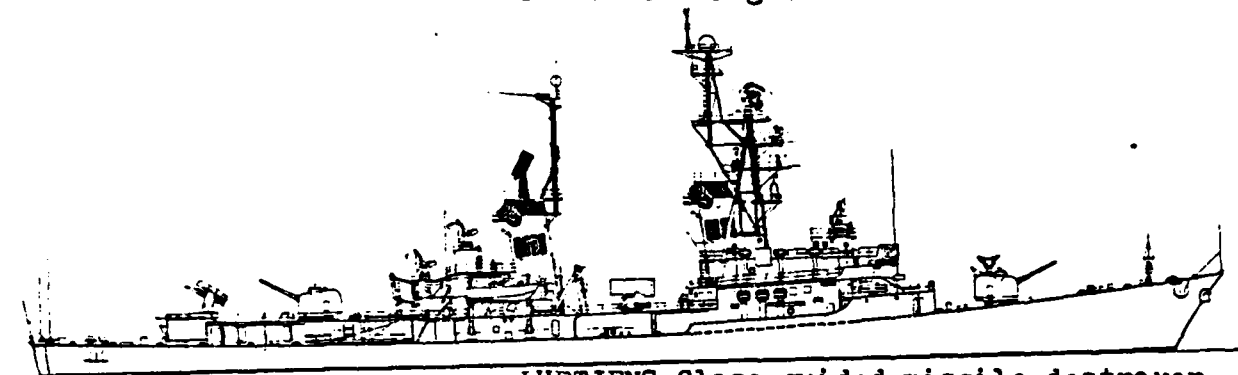


Photo 17: Sail training ship GORCH FOCK (441-Class).

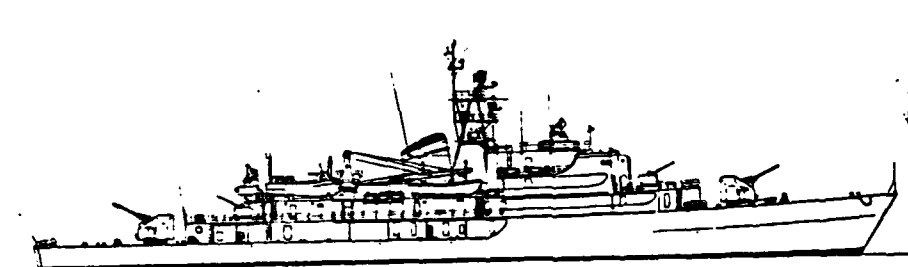
Warships and auxiliaries
of the German Navy



122-Class frigate



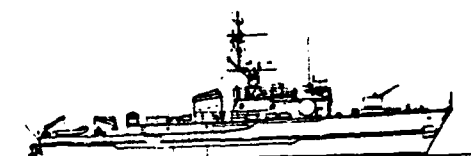
LUTJENS-Class guided missile destroyer



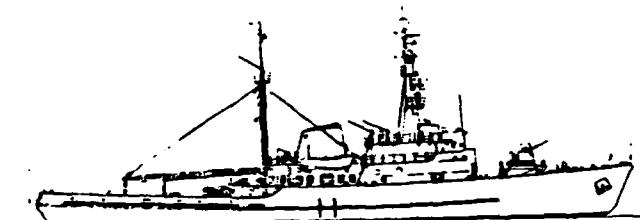
RHEIN-Class tender



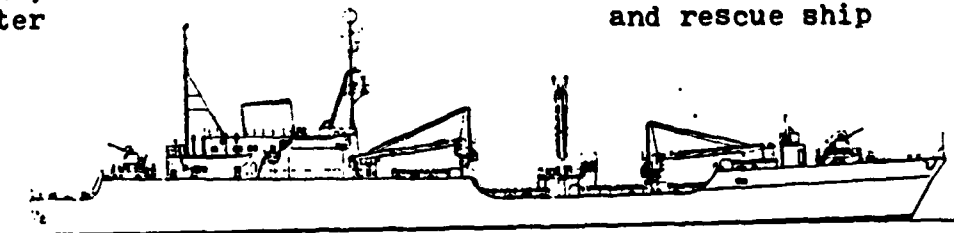
FRAUENLOB-Class
inshore minesweeper



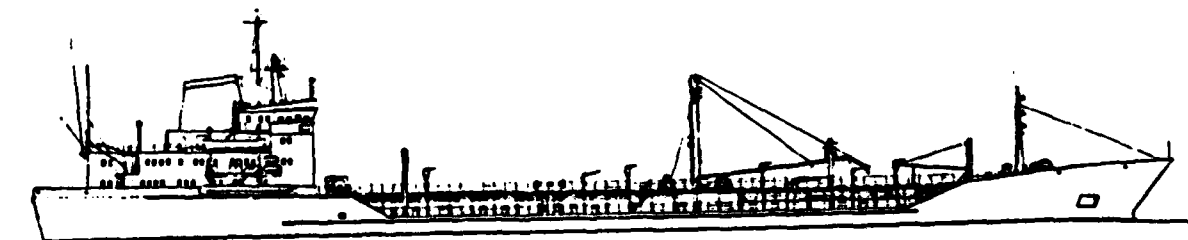
FLENSBURG, a LINDAU-Class
minehunter



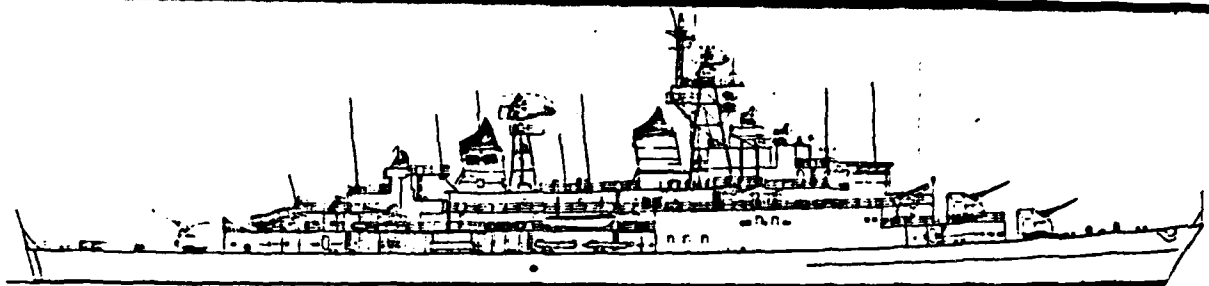
HELGOLAND-Class salvage
and rescue ship



WESTERWALD-Class ammunition transport



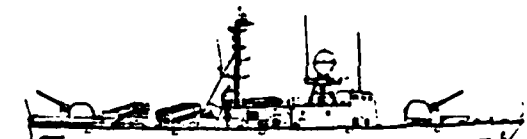
RHOEN-Class large oiler



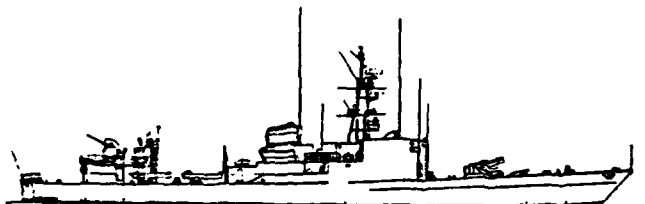
HAMBURG-Class guided missile destroyer



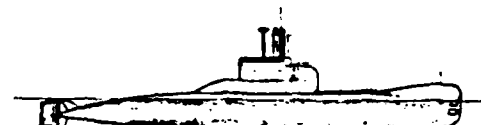
148-Class fast missile patrol boat



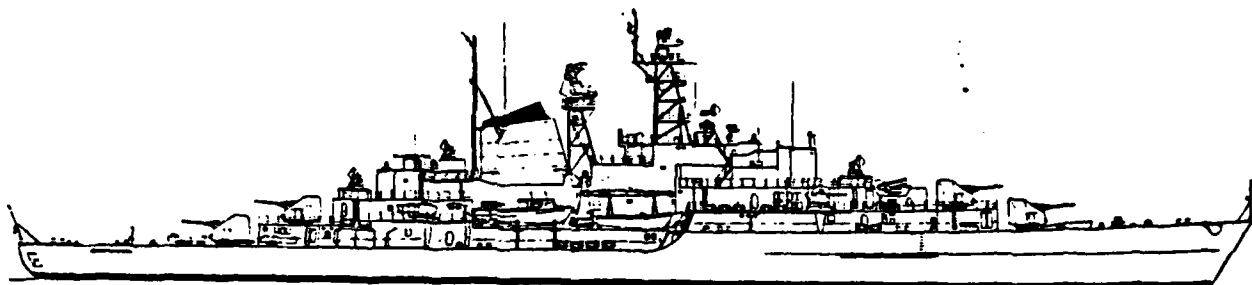
143-Class fast missile patrol boat



THETIS-Class ASW boat



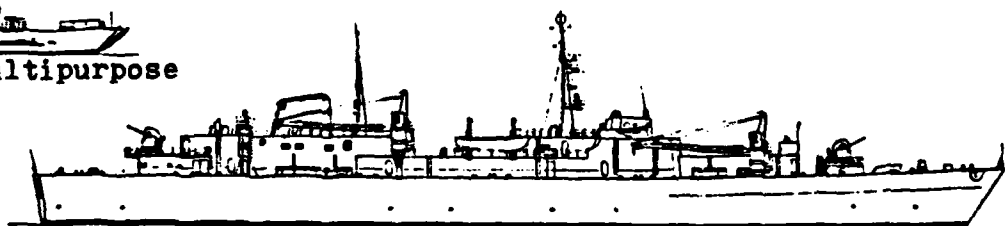
206-Class submarine



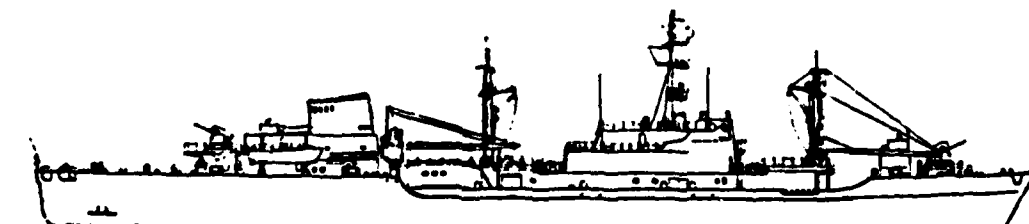
training ship DEUTSCHLAND



BARBE-Class multipurpose landing craft



SACHSENWALD-Class mine transport ship



LUENEBURG-Class supply ship; here, MEERSBURG after conversion

Principal data on modern German warships and naval auxiliaries

| Category | Period of construction | Full-load displacement | Dimensions: LOA x Beam x Draft | Propulsion | Speed, kn | Armament |
|---|------------------------|------------------------|--------------------------------|---------------------------------|--------------|---|
| Guided missile destroyers LUETJENS/103/3 | 1966-70 | 4544 | 134,28x14,30x4,79 | Steam turbines | 36,0 | 2 127-mm guns; 1 twin launcher for TARTAR missile; 1 ASROC launcher, 6 ASW torpedoes |
| Destroyers HAUBERK/101/4 | 1959-68 | 4330 | 133x70x13,40x4,80 | Steam turbines | 35,0 | 3 100-mm guns; 8 40-mm AA guns 4 EXOCET missiles; 2 ASW torpedoes |
| Frigates BREMER/122/6 | 1979-.. | 3800 | 128x10x14,80x6,00 | Gas turbines & diesel engines | 30,0 | 1 76-mm gun; 8 HARPOON missile launchers; 1 SEA SPARROW missile launcher; 2 missile launchers for short-range defense; 4 ASW torpedoes; 2 helicopters |
| ASW boats THELIS/420/5 | 1959-63 | 658 | 67,78x 8,20x2,65 | Diesel engines | 23,5 | 2 40-mm AA guns; 4 ASW torpedoes |
| Submarines U 13/206/18 | 1969-75 | 500 | 48,62x 4,50x4,30 | Electric engines | 10,0 17,0 | 8 torpedoes |
| Fast missile patrol boats S 417/148/20 | 1971-75 | 265 | 47,00x 7,02x2,66 | Diesel engines | 35,8 | 1 76-mm gun; 1 40-mm AA gun; 4 launchers for EXOCET missiles |
| Fast missile patrol boats S 617/143/10 | 1972-77 | 398 | 57,60x 7,76x2,56 | Diesel engines | 38,0 | 2 76-mm guns; 4 launchers for EXOCET missiles; 2 ASW torpedoes |
| Minehunters LINDAU/337/12 | 1957-60 | 402 | 47,70x 8,30x2,70 | Diesel engines | 16,0 | 1 40-mm AA gun |
| Inshore minesweepers FRAUENLOB/394/10 | 1964-68 | 249 | 38,01x 8,29x2,10 | Diesel engines | 11,2 | 1 40-mm AA gun |
| Mine transport ships SACHSEWALD/763/2 | 1966-69 | 3850 | 110,87x13,90x4,20 | Diesel engines | 17,0 | 4 40-mm guns; mines |
| Landing craft BARBE/520/22 | 1965-66 | 403 | 40,04x 6,80x | Diesel engines | 12,0 | 1 20-mm AA gun |
| Tenders RHEIN/701/8 | 1961-64 | 2740 | 98,18x11,80x3,90 | Diesel engines | 20,0 | 2 100-mm guns; 4 40-mm AA guns |
| Training ships DEUTSCHLAND/440/1 | 1959-63 | 5450 | 138,23x16,00x4,80 | Steam turbines & diesel engines | 22,0 | 4 100-mm guns; 6 40-mm AA guns 4 ASW torpedoes; 2 ASROC launchers |
| Small supply ships SAURBURG/7017 C/4 | 1964-68 | 3679 | 114,19x13,22x3,90 | Diesel engines | 17,0 | 4 40-mm AA guns |
| Large oilers MOEN/704/2 | 1974-77 | 17590 | 130,15x19,31x8,20 | Diesel engines | 16,0 | none |
| Ammunition transports WESTERWALD/760/2 | 1965-67 | 4032 | 105,27/14,02x3,70 | Diesel engines | 17,0 | 4 40-mm AA guns |
| Salvage & rescue ships HELGOLAND/720/2 | 1964-67 | 1620 | 67,91x12,74x5,00 | Diesel engines | 16,0 | 2 40-mm AA guns |

All data according to Breyer/Koop: "Die Schiffe und Fahrzeuge der Deutschen Bundesmarine, 1956-1976 (The Ships and Vessels of the West German Navy, 1956-1976)". Verlag Bernard & Graefe, Munich, 1978.